

**REMARKS**

Claims 1-29 are pending in the present application. In the Office Action, all claims were rejected. In response to the Office Action, claims 1 and 28 have been amended. No new matter has been added. Reexamination and reconsideration of the amended claims is respectfully requested.

Claim Rejections - 35 U.S.C. § 102

Claims 1-5, 8-12, 18, 25 and 28 were rejected under 35 U.S.C. § 102(e) as being anticipated by Hegde et al. (U.S. Patent Publication No. 2004/0147803). Such rejections are overcome for at least the following reasons.

Independent claim 1 has been amended to recite in part that said membrane engages said stiffened portion of said blood vessel to thereby reduce the external diameter of said stiffened-portion of said blood vessel and passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole. Support for this amendment may be found *inter alia* in the first paragraph of the detailed description (page 8) and the last line of the detailed description (page 19) of the application as filed, therefore no new matter has been added. Hegde fails to teach or suggest this feature.

Hegde discloses a ventricular assist device 200 having first and second layers 210, 220 that define a cavity therebetween 250. The first layer partially encircles a portion of a blood vessel. The cavity is then periodically pressurized by an externally mounted pump 300. When the cavity is pressurized, the pressure acting on the first layer deforms the first layer to thereby reduce the diameter of the blood vessel, only while the cavity is pressurized. When the cavity is depressurized, the blood vessel is allowed to relax and does not have a reduced diameter. The first layer merely acts as an interface for transmitting the pressure of the pressurized cavity to the wall of the blood vessel to deform it. The first layer does not carry blood pressure loads of the blood vessel throughout systole and diastole as recited in amended claim 1. While some embodiments in Hegde include an additional vascular engaging layer 410 joined to the first

layer, this engaging layer acts similarly to the first layer and thus it too fails to carry blood pressure loads of the blood vessel throughout systole and diastole.

Moreover, claim 1 is further distinguished from Hegde on the basis that the claimed invention is a passive device, whereas Hegde discloses an active device that relies on active pressurization and depressurization of a pressure chamber extending around the blood vessel only to periodically reduce diameter of the blood vessel.

Because the cited reference fails to teach each and every element of the claimed invention, anticipation under 35 U.S.C. § 102(e) cannot be established. Applicants respectfully request withdrawal of the rejection and allowance of claim 1 and the claims depending therefrom.

Independent claim 28 was also rejected under 35 U.S.C. § 102(e) as being anticipated by Hegde. Such rejection is overcome in part and traversed in part for at least the following reasons.

Claim 28 recites in part a method of treating a blood vessel, said blood vessel having a native tissue portion and a synthetic portion...said method comprising at least substantially encasing said synthetic portion with an elastic membrane form of biocompatible material. Hegde fails to teach or suggest this feature.

Hegde discloses encircling a portion of a blood vessel with his vascular assist device. Hegde fails to teach or suggest substantially encasing a synthetic portion of a blood vessel with an elastic membrane, as recited by claim 28.

Nevertheless, in order to further distinguish the claimed invention from Hegde, claim 28 has similarly been amended as claim 1. Therefore for at least the same reasons discussed above with respect to claim 1, claim 28 is also distinguishable from Hegde. Applicants respectfully request withdrawal of the 35 U.S.C. § 102(e) rejection and allowance of claim 28 along with the claims depending therefrom.

Claim Rejections - 35 U.S.C. § 103

Hegde in view of Chuter

Claims 6 and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Chuter (U.S. Patent No. 5,387,235). Such rejections are overcome for at least the following reasons.

Claims 6 and 29 include the features recited in independent base claims 1 and 28, respectively. Claims 1 and 28 have been distinguished from Hegde as discussed above. Chuter fails to provide the elements missing from Hegde.

Chuter discloses a prosthesis that is disposed internally in a vessel (Fig. 15) therefore Chuter's device cannot reduce external diameter of said stiffened-portion of said blood vessel and passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claims 6 and 29.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claims 6 and 29.

Hegde in view of Von Oepen

Claim 7 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Von Oepen (U.S. Patent Publication No. 2002/0151959). Such rejection is overcome for at least the following reasons.

Claim 7 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Von Oepen fails to provide the elements missing from Hegde.

Von Oepen discloses a radial expandable stent (Abstract). The stent is placed inside a blood vessel and therefore Von Oepen's device cannot reduce external diameter of said stiffened-portion of said blood vessel and passively carry at least a portion of blood pressure

loads acting on said blood vessel throughout systole and diastole, features now included in claim 7.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 7.

Hegde in view of Spaulding

Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Spaulding (U.S. Patent No. 5,304,200). Such rejection is overcome for at least the following reasons.

Claim 13 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Spaulding fails to provide the elements missing from Hegde.

Spaulding discloses a radially expandable stent (Abstract). The stent is placed inside a blood vessel and therefore Spaulding's device cannot reduce external diameter of said stiffened-portion of said blood vessel and passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claim 13.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 13.

Hegde in view of Picha

Claim 14 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Picha (U.S. Patent No. 5,057,118). Such rejection is overcome for at least the following reasons.

Claim 14 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Picha fails to provide the elements missing from Hegde.

Picha discloses a vessel occlusion device having a strap that compresses a blood vessel against a base to traumatically occlude the vessel (Abstract). Because Picha's device occludes blood flow, the device cannot passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claim 14.

Moreover, one of skill in the art would not combine Hegde and Picha. Hegde's device is designed to compress a blood vessel while still maintaining blood flow therethrough and Picha's device is designed to completely occlude blood flow. Combining Picha with Hegde would result in a device that is inoperative.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention and because one of skill in the art would not combine the cited references, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 14.

Hegde in view of Jones

Claim 15 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Jones (U.S. Patent No. 4,202,349). Such rejection is overcome for at least the following reasons.

Claim 15 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Jones fails to provide the elements missing from Hegde.

Jones discloses a radiopaque vessel marker for attaching to a side wall of a blood vessel (Abstract). Jones fails to teach or suggest that his device is used to passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claim 15.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention and because one of skill in the art would not combine

the cited references, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 15.

Hegde in view of Dusbabek

Claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Dusbabek (U.S. Patent Publication No. 2001/0007082). Such rejection is overcome for at least the following reasons.

Claim 16 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Dusbabek fails to provide the elements missing from Hegde.

Dusbabek discloses a stent delivery system (Abstract). The system is placed inside a blood vessel and thus Dusbabek's system cannot reduce external diameter of said stiffened-portion of said blood vessel and passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claim 16.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 16.

Hegde in view of Fontaine

Claim 17 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Fontaine (U.S. Patent No. 5,314,472). Such rejection is overcome for at least the following reasons.

Claim 17 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Fontaine fails to provide the elements missing from Hegde.

Fontaine discloses a vascular stent (Abstract) that is placed inside a blood vessel. Therefore, Fontaine's stent cannot reduce external diameter of said stiffened-portion of said blood

vessel and passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claim 17.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 17.

Hegde

Claims 19-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde. Such rejection is overcome for at least the following reasons.

Claims 19-24 include the features recited in independent base claim 1 which has already been distinguished from Hegde above.

Because the cited reference fails to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claims 19-24.

Hegde in view of Silvestrini

Claim 26 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hegde in view of Silvestrini (U.S. Patent No. 4,834,755). Such rejection is overcome for at least the following reasons.

Claim 26 includes the features recited in independent base claim 1 which has already been distinguished from Hegde above. Silvestrini fails to provide the elements missing from Hegde.

Silvestrini discloses a braided prosthesis for use as an artificial ligament or tubular prosthesis (Abstract). Even if Silvestrini's device is used as a vascular prosthesis, it would be used to replace a section of a blood vessel, therefore it would not be placed around a vessel and Silvestrini's device would not reduce external diameter of said stiffened-portion of said blood

vessel and passively carry at least a portion of blood pressure loads acting on said blood vessel throughout systole and diastole, features now included in claim 26.

Because the cited references alone or in combination fail to teach or suggest each and every element of the claimed invention, *prima facie* obviousness cannot be established under 35 U.S.C. § 103(a). Applicants therefore respectfully request withdrawal of the rejection and allowance of claim 26.

### CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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